



Government Support Services – Contracting  
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October 22, 2010

TO: ALL STATE AGENCIES, SCHOOL DISTRICTS, MUNICIPALITIES, VOLUNTEER  
FIRE COMPANIES AND POLITICAL SUBDIVISIONS

FROM: PETER KOROLYK  
STATE CONTRACT PROCUREMENT OFFICER  
302-857-4559

SUBJECT: **AWARD NOTICE**  
**CONTRACT NO. GSS10009-MOTOR\_OIL**  
**MOTOR OIL, RE-REFINED MOTOR OIL, LUBRICANTS AND ANTIFREEZE**

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## **KEY CONTRACT INFORMATION**

### **1. MANDATORY USE CONTRACT:**

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**REF: Title 29, Chapter 6911(d) Delaware Code.** Every state department and agency within the Executive Branch and Judicial Branch of the state government shall procure all material, equipment and nonprofessional services through the statewide contracts administered by Government Support Services, Office of Management and Budget. Delaware State University, Delaware Technical and Community College, the operations funded by Public School Districts, Delaware Transit Corporation, Department of Elections, the Legislative Branch and the Board of Pension Trustees and their consultants are specifically exempted from the requirements of this subsection.

### **2. CONTRACT PERIOD:**

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Each contractor's contract shall be valid for a one (1) year period from November 1, 2010 through October 31, 2011. Each contract may be renewed for two (2) additional one (1) year period through negotiation between the contractor and Government Support Services. Negotiation may be initiated no later than ninety (90) days prior to the termination of the current agreement.

### **3. VENDORS:**

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<b>PPC Lubricants</b> <b>305 Micro Drive</b> <b>Jonestown, PA 17038</b>  <b>Contact: Malinda Rivera</b> <b>Phone: 800-772-5823 x1127</b> <b>Fax: 866-772-5823</b> <b>Email: <a href="mailto:mrivera@ppclubricants.com">mrivera@ppclubricants.com</a></b>  <b>FSF: GSS10009-MOTOR_OILV01</b>	<b>Craft Oil Corp.</b> <b>837 Cherry St.</b> <b>Avoca, PA 18641</b>  <b>Contact: Kirt Stevens or Candace Williams</b> <b>Phone: 800-451-5823</b> <b>Fax: 570-451-0700</b> <b>Email: <a href="mailto:kstevens@craftoilcorp.com">kstevens@craftoilcorp.com</a></b>  <b>FSF: GSS10009-MOTOR_OILV02</b>
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### **4. SHIPPING TERMS:**

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F.O.B. destination, freight prepaid.

**5. DELIVERY AND PICKUP:**

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	PPC Lubricants	Craft Oil Corp.
	Delivery Time	Delivery Time
Pre-packaged Fluid Products	2-5 days	3-5 days
Bulk Fluid Deliveries	2-5 days	3-5 days

**6. PRICING:**

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To view the pricing spreadsheet go to the following web page:

<http://www.gss.omb.delaware.gov/contracting/contracts/009.shtml>

Prices will remain firm for the term of the contract year.

**7. MOST FAVORED CUSTOMER:**

The Vendor shall not offer to others prices lower than those provided in the contract, or if lower prices are offered, they must also apply to the subject contract.

**ADDITIONAL TERMS AND CONDITIONS**

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**8. BILLING:**

The successful vendor is required to **"Bill as Shipped" to the respective ordering agency(s).** Ordering agencies shall provide at a minimum the contract number, ship to and bill to address, contract name and phone number.

**9. PAYMENT:**

The agencies or school districts involved will authorize and process for payment each invoice within thirty (30) days after the date of receipt. The contractor or vendor must accept full payment by procurement (credit) card and/or conventional check and/or other electronic means at the State's option, without imposing any additional fees, costs or conditions.

**10. TAX EXEMPTION:**

- a. Material covered by this proposal is exempt from all FEDERAL and STATE TAXES. Such taxes shall not be included in prices quoted.

- b. Any material which is to be incorporated in the work or any equipment required for the work contemplated in the proposal may be consigned to the Agency. If the shipping papers show clearly that any such material is so consigned, the shipment will be exempt from the tax on the transportation of property under provisions of Section 3475 (b) of the Internal Revenue Code, as amended by Public Law 180 (78th Congress). All transportation charges shall be paid by the Vendor. Each Vendor shall take its exemption into account in calculating its bid for its work.

**11. PRODUCT SUBSTITUTION:**

All items delivered during the life of the contract shall be of the same type and manufacture as specified unless specific approval is given by Government Support Services to do otherwise. Substitutions may require the submission of written specifications and product evaluation prior to any approvals being granted.

**12. ORDERING PROCEDURE:**

Successful contractors are required to have either a local telephone number within the (302) area code, a toll free (800) number, or agree to accept collect calls. Each agency is responsible for placing their orders and may be accomplished by written purchase order, telephone, fax or computer on-line systems. The contractor or vendor must accept full payment by procurement (credit) card and/or conventional check and/or other electronic means at the State's option, without imposing any additional fees, costs or conditions.

**13. HOLD HARMLESS:**

The contractor agrees that it shall indemnify and hold the State of Delaware and all its agencies harmless from and against any and all claims for injury, loss of life, or damage to or loss of use of property caused or alleged to be caused, by acts or omissions of the contractor, its employees, and invitees on or about the premises and which arise out of the contractor's performance, or failure to perform as specified in the Agreement.

**14. NON-PERFORMANCE:**

In the event the contractor does not fulfill its obligations under the terms and conditions of this contract, the ordering agency may purchase equivalent product on the open market. Any difference in cost between the contract prices herein and the price of open market product shall be the responsibility of the contractor. Under no circumstances shall monies be due the contractor in the event open market products can be obtained below contract cost. Any monies charged to the contractor may be deducted from an open invoice.

**15. FORCE MAJEURE:**

Neither the contractor nor the ordering agency shall be held liable for non-performance under the terms and conditions of this contract due, but not limited to, government restriction, strike, flood, fire, or unforeseen catastrophe beyond either party's control. Each party shall notify the other in writing of any situation that may prevent performance under the terms and conditions of this contract.

**16. AGENCY'S RESPONSIBILITIES:**

The Agency shall:

- a. Examine and review in detail all letters, reports, drawings and other documents presented by the Contractor to the Agency and render to the Contractor in writing, findings and decisions pertaining thereto within a reasonable time so as not to delay the services of Contractor.
- b. Give prompt written notice to the Contractor whenever the Agency observes or otherwise becomes aware of any development that affects the scope or timing of the Contractor's services.

**17. FORMAL CONTRACT AND/OR PURCHASE ORDER:**

No employee of the Contractor(s) is to begin any work prior to receipt of a State of Delaware Purchase Order signed by authorized representatives of the agency requesting service, properly processed through the State of Delaware Accounting Office. A purchase order, telephone call, fax or State credit card shall serve as the authorization to proceed with work in accordance with the bid specifications and the special instructions, once it is received by the Contractor(s).

**18. TERMINATION OF INDIVIDUAL ORDERS OR PURCHASE ORDERS:**

As a central contract, the contract resulting from this RFP shall include individual orders from state agencies and other entities authorized by law to procure from this contract. The individual orders may be terminated as follows:

- a. Termination for Cause If, for any reasons, or through any cause, the Vendor fails to fulfill in timely and proper manner his obligations, or if the Vendor violates any of the covenants, agreements, or stipulations of this contract, the Agency shall have the right to terminate the P.O. by giving written notice to the Vendor of such termination and specifying the effective date thereof, at least five (5) days before the effective date of such termination. In that event, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs, and reports or other material prepared by the Vendor in the performance of the P.O. shall, at the option of the Agency, become its property, and the Vendor shall be entitled to receive just and equitable compensation for any satisfactory work completed on such documents and other materials which is usable to the Agency.
- b. Termination for Convenience The Agency may terminate the P.O. at any time by giving written notice of such termination and specifying the effective date thereof, at least sixty (60) days before the effective date of such termination. In that event, all finished or unfinished documents, data, studies, surveys, drawings, models, photographs, reports, supplies, and other materials shall, at the option of the department, become its property and the Vendor shall be entitled to receive compensation for any satisfactory work completed on such documents and other materials which are usable to the Agency.
- c. Termination for Non-Appropriations In the event the General Assembly fails to appropriate the specific funds necessary to enter into or continue the contractual agreement, in whole or part, the agreement shall be terminated as to any obligation of the State requiring the expenditure of money for which no specific appropriation is available at the end of the last fiscal year for which no appropriation is available or upon the exhaustion of funds. This is not a termination for convenience and will not be converted to such.

**19. TESTING AND INSPECTION:**

The State of Delaware reserves the right to conduct any test or inspection it may deem necessary to insure equipment, materials and services conform to contract requirements.

**20. DRUM DEPOSIT AND CREDIT:**

The awarded vendor shall pick-up all empty drums as they become available, and have been notified. This includes any drums left over from the previous contract vendor(s). Agencies are to inform the vendor(s) of the quantity empty drums that shall be picked up. Unless other arrangements are made with the requesting agency, all drums requested for pick-up shall occur with five (5) business days.

Any deposits levied on returnable drums shall be shown as a separate charge on each invoice. All drum deposits shall be credited to the ordering agency at the full value upon pickup of the empty drums. All returned drums shall remain the property of the successful vendor.

**21. APPENDIX A: SCOPE OF WORK DETAILS & TECHNICAL SPECIFICATIONS:**

**CONTRACT SPECIFIC DEFINITIONS**

API Certification – The American Petroleum Institute Engine Oil Licensing and Certification System (APIEOLCS) requires that re-refined oils pass the same cold-start, pumpability, rust-corrosion, engine wear & high temperature viscosity tests as virgin oils, so that consistent performance standards for all engine oils are met. Certifications submitted in response to this RFP must be for the finished product (s) to be provided under the contract.

ASTM Standards – The American Society for Testing and Materials specifies the exact way in which a product is to be tested, including the rule, techniques and conditions which **must** be adhered to in engineering design so that all manufacturers are working with the same procedures and values.

DEF – Diesel Exhaust Fluid is a blended aqueous solution of 32.5% high purity urea and 67.5% deionized water.

ILSAC – The International Lubricant Standardization and Approval Committee, which in 2004 established GF-4 as the minimum performance standard for gasoline-fueled passenger car engine oils.

Recyclability – The ability of a product or material to be recovered from or otherwise diverted from the solid waste stream for the purpose of recycling.

Re-Refined Oil – In the context of this RFP refers to the base oil stock derived from waste oil which has undergone a series of mechanical and chemical processes, including, but not limited to, contaminant removal, dehydration, vacuum distillation and hydro-treating in order to produce a product consistent in properties and quality (see Section J for more details on the requirements of this process).

SAE – The Society of Automotive Engineers works with API and ASTM in developing and maintaining testing and licensing requirements for various oils and lubricants.

Synthetic Blend Motor Oil – In the context of this RFP, synthetic blend motor oil consists of a base minimum 30% synthetic composition with the remainder consisting of mineral oil.

Urea – is a compound of nitrogen that turns to ammonia when heated. It is used in a variety of industries, including as a fertilizer in agriculture.

Virgin – Virgin products are those made with 100% new/raw materials and contain no recycled content.

## OVERVIEW

The specifications cover the grades of refined petroleum oil and lubricants, which will be suitable for use in internal combustion engines, transmissions and grease applications. These products shall not be adulterated with waste lubricants or similar products.

The oils and lubricant products shall be manufactured in accordance with recognized industry and vehicle/engine manufacturers' specifications. The Supplier shall inspect each shipment to ensure that each delivered lot meets the specifications and is not contaminated at the time of delivery. Deliveries of product under this specification shall be subject to quality testing by the State to ensure compliance with the specifications. The Supplier may be asked to provide lab analyses of products at its expense, including at a minimum the following information: viscosity, viscosity index, contents of additive package, and fingerprint chemical analysis. During the term of the contract, Supplier shall notify the purchaser of any changes in product formulation within thirty (30) days of the product reformulation.

All metal drums must be contaminant free, new or A-1 reconditioned drums. Reconditioned drums shall meet the most current Class 1 requirements of Federal Specification PPP-D-732C. All containers and drums shall be filled and sealed at suppliers' refinery. The following information shall be stenciled on each drum unless the vendor as a re-packing agreement. If containers are being filled under a repackaging agreement, a copy of the agreement shall accompany your proposal.

1. API Number and S.A.E. Number
2. The proper specification number, military or otherwise, where applicable.
3. Trade name of material
4. Supplier's name
5. Contents in gallons of oil and contents in pounds of grease

## TECHNICAL SPECIFICATION

All items submitted shall be the producer's highest quality. Normal industry-wide manufacturing tolerances will be acceptable. Acceptable manufacturers should have any required licenses with the American Petroleum Institute (API) for current service requirement classifications.

### A. HEAVY DUTY MOTOR OIL (Single and Multi-Viscosity)

These oils shall be suitable for the lubrication of heavy-duty diesel engines under all conditions of service including ambient temperatures of 10 degrees Fahrenheit, and shall meet the most current API service requirement classifications, and shall be upgraded to newer API service classifications on the effective dates for the new classifications. All products shall also be backward compatible with previous API service requirement classifications.

### TECHNICAL SPECIFICATION

A. HEAVY DUTY MOTOR OIL (Single and Multi-Viscosity) – (Continued)

These heavy-duty motor oils also shall pass diesel engine manufacturers' specifications.

Single Viscosity Grades – 10W, 20W, 30W, 40W, & 50W

	10W	20W	30W	40W	50W
API, CF	X	X			
API CF-4, CF-2, CF, SJ			X	X	
API CF-2, CF, SJ					X
Mack EO-K/2, EO-K		X	X		
Detroit Diesel Series 53, 71, 92			X	X	X
Allison C-4, C-3	X		X		
CAT TO-2	X		X		

Multi-Viscosity Grades –15W40 & 10W30

	15W40	10W30
API, CJ4, CI-4 PLUS, CI-4, CH-4, CG-4, CF-4	X	All except CI-4 PLUS
API SM, SL	X	X
Caterpillar, ECF-2, ECF-3	X	X
Cummins CES 20081	X	
Detroit Diesel, 93K218	X	
Mack, EO-O Premium Plus 07	X	X
Volvo, VDS-4	X	X

A1. RE-REFINED MOTOR OIL (Single and Multi-Viscosity)

Re-refined oils meeting the most current API service requirement classifications for 5W30, 10W30 and 15W40 will be considered as equal to virgin oil base stocks.

Additional considerations for re-refined base oils are noted in Section K of the Scope of Work and Technical Specifications.



## TECHNICAL SPECIFICATION

### B. ENGINE OIL

These oils shall be formulated to meet or exceed severe operating requirements for both on and off highway internal combustion engines fueled with gasoline or alternative fuels. The oils shall meet the most current API service requirements classifications and shall be upgraded to newer API service classifications on the effective dates for the new classifications. All products shall also be backward compatible with previous API service requirement classifications.

These engine oils shall also pass passenger car manufacturers' latest warranty requirements.

These engine oils shall be available in the following grades:

	5W20	5W30	10W30	10W40	20W50
ILSAC GF-4	X	X	X		
API SM	X	X	X	X	X
Energy Conserving	X	X	X		

### B1. RE-REFINED BASE OIL

Re-refined base oils meeting the most current API service requirement classifications for 5W30, 10W30 and 15W40 will be considered as equal to virgin oil base stocks.

Additional considerations for re-refined base oils are noted in Section K of the Scope of Work and Technical Specifications.

### C. SYNTHETIC BLEND ENGINE OIL

Similar to the standard motor oil requirements, the synthetic blend oils shall be formulated to meet or exceed severe operating requirements for both on and off highway internal combustion engines fueled with gasoline or alternative fuels. The oils shall meet the most current API service requirements classifications and shall be upgraded to newer API service classifications on the effective dates for the new classifications. All products shall also be backward compatible with previous API service requirement classifications.

The synthetic blend oil must contain a minimum 30% synthetic oil composition.

	5W20	5W30	10W30	10W40	20W50
ILSAC GF-4	X	X	X		
API SM	X	X	X	X	X
Energy Conserving	X	X	X		

## TECHNICAL SPECIFICATION

### D. OUTBOARD MOTOR OIL

This motor oil shall be a two-cycle oil, B.I.A.; TC-W-III approved, to be used in a 2 cycle outboard engine.

This oil shall be designed to meet the requirements of all major manufacturers of two cycle outboard engines, including Johnson, Evinrude, Mercury and Chrysler.

### E. MULTI-PURPOSE GEAR OIL

This oil shall be supplied in S.A.E. grades 80 W/90 and 85 W/140 and shall meet military specification MIL-PRF-2105E, Mack GO-J, or the API Service Designation GL5 and MT1, including most current revisions, and shall be suitable for use in limited slip differentials.

### F. MULTI-PURPOSE GREASE

The grease shall be a homogenous combination of refined mineral oil, lithium and such other constituents as may be necessary to assure the following:

1. Low temperature performance
2. High temperature performance
3. Water washing resistance
4. Oxidation resistance
5. Storage stability
6. Leakage resistance
7. Texture Smooth - Cohesive and Adhesive
8. Mechanically stable (resists change in severe service)
9. Free of any disagreeable odor

The chemical and physical characteristics shall be as specified in the following tables:

TYPE I CHARACTERISTICS (EXTREME PRESSURE)	#2 N. L. G. I.*
Penetration at 77 degrees F	
60 strokes worked – (tenths of mm)	265/295
10,000 strokes worked – (tenths of mm)	+
Unit change	-20
Dropping Point degrees F (min.)	350
Type Soap	Lithium
Soap content percent by weight (typical)	7.0/9.0
Water	Trace
Grease Oxidation, psi drop (max.)	10
Leakage tendency of grease percent lost (max.)	10
Base Oil Viscosity SUS at 100 degrees F	700/1000
*National Lubricating Grease Institute	

## TECHNICAL SPECIFICATION

### F. MULTI-PURPOSE GREASE - (Continued)

The grease shall be designed for all season use in grease lubricated components of automotive equipment including chassis bearings, suspension units, steering linkage, wheel bearings, universal joints and water pumps of passenger cars, trucks, buses and other equipment. The grease shall be designed for the lubrication of wheel bearings equipped with disc brakes, including front wheel bearings of front wheel drive cars.

#### TYPICAL PROPERTIES:

Dropping Point: C (F)	288 (550)
Penetration, D-217	
Unworked	270
Worked 60 Strokes	285
Worked 10,000 Strokes	308
Color, Visual	Cream
Texture	Smooth-Buttery
Rust Prevention, D-1743	Pass (No. 1 Rating)
Wear Test, 4-Ball, D-2266 Ave. Sear diameter: mm	0.32
EP Test, 4-Ball, D-2596 L.W.I. Weld Pint: kg	49.6 400
Water Washout, D-1264 Loss at 37.8C (100F): % Loss at 74.4C (175F): %	0.5 1.0
Leakage Tendencies, D-1263 (Mod.) 24 hrs., 121.1C (250F) Total leakage: g	0.5
Oxidation Stability, D-942 Pressure drop: kPa (psi) 100 hours 200 hours 300 hours 400 hours 500 hours	0 (0) 6.9 (1) 6.9 (1) 6.9 (1) 13.8 (2)
Copper Strip, FTMS 791-5308 24 hrs., 100C (212F) Fafnir Fretting Corrosion Test GM Method 9096-P Weight Loss: mg Ball joint wear test, D-3428 Housing weight loss: mg Bring Sensitivity	No Corrosion   2.5 7.9 Pass (no squawk)

## TECHNICAL SPECIFICATION

### G. MOLY GREASE

Heavy-duty, multi-purpose lubricants enhance with molybdenum disulfide for applications that demand a long-lasting, tenacious, adhesive film. This superior film provides protection against water, salt brine, rust and corrosive contaminants. Molly Grease is recommended for: Heavy-duty Chassis lubrication, Ball Joints, King pins, Steering Knuckles, Fifth Wheels, Bucket Loader Ball Joints, Open Gears, Racks, Cams, Slides and Ways, Underwater Applications. [NLGI grade 00, 0, 1 or 2, ASTM D217].

### H. HYDRAULIC OIL

The hydraulic fluid shall be an oil containing rust and oxidation inhibitors plus an anti-foam agent and an anti-wear additive. Must meet the following manufacturer's specifications: Case Hy-Tran, Tellusis 046, and Donax TD.

TYPICAL PROPERTIES S.A.E.	-10 32AW	+10 46AW	20 68AW
Former Designation	43AW	48AW	54AW
ISO Viscosity Grade	32	46	68
ASTM Viscosity Grade No. (Saybolt)	150	215	315
Gravity: API	31.1	30.3	29.5
Viscosity, Kin.: CST 40.0 degrees C (100 degrees F) 100.0 (212)	30.04 5.26	42.70 6.57	62.9 8.43
Viscosity SSU 37.8 degrees C (100 degrees F) 98.9 (210)	155 43.9	220 48.2	325 54.6
Viscosity Index, ASTM D 2270	106	105	104
Interfacial Tension, D 971 77 F: dyn/cm	31	31	31
Flash, P-M:E	400	405	450
Flash OC:F	425	430	470
Fire OC:F	455	470	500
Pour: F	-25	-25	-20
Color, ASTM d 1500	L0.5	L0.5	L1.0
Carbon Residue, Ramsbottom: %	0.30	0.30	0.36
Rust Preventive Test, ASTM D 665 Procedure A, 24 hr. Procedure B, 24 hr.	Passes Passes	Passes Passes	Passes Passes
Neutralization No. ASTM			
D 974 Total Acid No.	0.68	0.68	0.68

## TECHNICAL SPECIFICATION

### H. HYDRAULIC OIL: (Continued)

The hydraulic fluid shall be an oil containing rust and oxidation inhibitors plus an anti-foam agent and an anti-wear additive.

Oxidation Test, ASTM D 943 Time Oxidized			
Hr. to 2.0 Acid No.	2000+	2000+	2000+
Emulsion, FTMS 791 3201, 180 degrees F			
Distilled Water: Minutes	40-40-0 (3)	40-40-0 (3)	40-40-0 (3)
Aniline Point ASTM D 611:F	217	220	228

### I. AUTOMATIC TRANSMISSION FLUID

#### TRANSYND

Transynd TES-295, Severe Duty Extended Interval Automatic Transmission fluid exhibits a higher resistance to oxidation and viscosity change than the c-4 specification fluids, while providing superior wear resistance and frictional properties for extended use in severe duty applications, such as city transit buses, refuse packers, tour coaches, and transmissions with Allison retarder options.

TEST	METHOD	REQUIREMENT
Metals Content (ppm)	ASTM D4951	Report: Ba, B, Ca< Mg, P, Si, Na, and Zn
Chlorine Content (ppm)	ASTM D808	Report
Nitrogen Content (ppm)	ASTM D3228	Report
Sulfur Content (ppm)	ASTM D129 or D4951	Report
Total Acid Number	ASTM D664	Report
Total Base Number	ASTM D2896 or D4739	Report
Infrared Spectrum	ASTM E168	Report (provide IR scan)

## TECHNICAL SPECIFICATION

### I. AUTOMATIC TRANSMISSION FLUID (Continued)

#### TRANSYND – (Continued)

TEST	METHOD	REQUIREMENT
Kinematic Viscosity (cSt) (Unused "fresh" fluid)	ASTM D445	-Report KV at 40 C -Report KV at 100 C -7.0 min KV at 100 C
Brookfield Viscosity (cP)	ASTM D2983	-Report BV at -10 C, -20 C, -30C, and -40 C -8700 max at -40 C
Flash Point (C)	ASTM D92	235 min
Fire Point (C)	ASTM D92	270 min
Copper Strip Test	ASTMD130 (modified) 3 hrs. at 150C	1B
Corrosion Test	ASTM D665 (Procedure A)	Pass
Rust Protection Test	ASTM D1748 Sandblasted surface, 40 C, 50 hrs.	No rust or corrosion on any test surface
Seals Compatibility Tests	GM6297M (Appendix B)	Pass
Foam Tests	GM6297M (Appendix A)	No foam at 95 C or 135 C
Gear Scuffing Wear Test	ASTM D5182	-Failure Load Stage >12 -EOT Gear Weight Loss <0.12 g
Oxidation Test	GM6297M (Appendix E – modified) 600 hrs.	-EOT 40 C KV Change = 12% max -EOT 100 C KV Change = 9% max -EOT -20 C Brookfield Viscosity = 1260 max -EOT TAN change = 3.25 -EOT Pentane Insolubles = 0.04% max -EOT Metals: Fe < 25 ppm, Cu <20 ppm, Pb < 100 ppm

## TECHNICAL SPECIFICATION

### I. AUTOMATIC TRANSMISSION FLUID

#### TRANSYND – (Continued)

TEST	METHOD	REQUIREMENT
Frictional Properties Test Graphic Materials	TES-228 (Section VIII)	-EOT Slip Time <0.63 seconds -EOT Midpoint Dynamic Coefficient >0.112
Frictional Properties Test Paper Materials	TES-228 (Section IX- modified) 30,000 cycles	-EOT Slip Time <0.45 seconds -EOT Midpoint Dynamic Coefficient >0.115
Cycling Validation Tests	TES-303	-EOT Metals: Fe <60 ppm, Cu <10 ppm, Pb < 30 ppm -EOT Viscosity at 100 C > 7.4 eSt min -Viscosity change = 5% max over 550 hour test duration -EOT TAN (Total Acid Number) <0.8 -No sludge or varnish on parts -No reaction plate wear -No bushing corrosion or lead depletion -No shift anomalies or excessive adaptive calibration change -Performance equal to or better than the reference fluid
Ppm – parts per million KV – Kinematic Viscosity	Cp – centi-poise BV – Brookfield Viscosity	eSt- centi-stokes

## TECHNICAL SPECIFICATION

### J. UNIVERSAL TRACTOR FLUID

The tractor fluid shall be UTF C-4, used for single multi-functional transmission, hydraulic and wet brake fluid for the new generation of larger tractors plus those already in the field. This fluid is designed for the hydraulic-transmission system of self-propelled implements such as combines, cotton pickers, hay cubers, windrowers, corn pickers, as well as towed types of related equipment and equipment with hydrostatic drives. Must meet the following manufacturer's specifications: Case Hy-Tran, Telluris 046 and Donax TD. This tractor fluid is to be used wherever the following products are recommended:

Allis Chalmers	Hydraulic Power Fluid 272843 Transmission and Hyd. Fluid 821
John Deere	J20C, J21A, J20A Fluid
Ford Tractor	ESN-M2C 134-D M2C86-A and M2C134-A
International Harvester	B6, HY-TRAN
Massey Ferguson	M-141, M-1110, M-1127, M-1129A, M-1135
Oliver Tractor	TYPE 55
J.I. Case	MS-1206, 1210, JIC-143, JIC-145, JIC-185
Minneapolis-Moline	Hydraulic Fluid
White Farm Equipment	UHTF, TYPE 55
Detroit Diesel Allison Div. C-4 fluid	
Caterpillar	TO-2
Sundstrand Hydrostatic Transmissions	

#### TYPICAL ANALYSIS:

Viscosity SUS @ 210 degrees F	55.68
Viscosity SUS @ 100 degrees F	285.7
Viscosity Index	150
Flash Point, degrees F	420
Pour Point, degrees F	-25

### K. RE-REFINED OIL

Bidders **shall** submit documentation from the re-refiner, which demonstrates that the re-refined motor oil products being PROPOSAL have undergone the following process.

1. Vacuum distillation to remove contaminants such as dirt, water, fuel and used additives from the oil.
2. Hydro-finishing to remove the remaining chemicals and contaminants from the base oil and restore it original condition.



## TECHNICAL SPECIFICATION

### K. RE-REFINED OIL – (Continued)

3. Blending of the highest quality additives into the base product to fortify and bring the oil to the desired performance standards.
4. Offer only motor oil that is certified by the American Petroleum Institute (API) and meet ILSAC requirements.
5. Submit copies of such API certification, ILSAC compliance and related warranties with Proposal response that clearly indicate the manufacturer and brand name of the finished product(s) being offered.
6. Agree to offer warranties that provide for the full-cost replacement of all equipment that is damaged as a direct result of oil which does not meet the required performance specifications when used appropriately: copies of these warranties **shall** be included with the response.
7. Offer only re-refined motor oil products that contain a minimum of 50% re-refined base stock that meets the standards and specifications designated in this RFP.
8. Offer at a minimum, re-refined oil in grades 5W30, 10W30, and 15W40 that meet automobile/equipment manufacturer's specifications and warranty requirements as follows:
  - Multi-grades 5W30 and 10W30 shall meet the performance and warranty requirements of a broad range of passenger and light truck gasoline engines of major automobile manufacturers and the most current API service requirements classifications.
  - Multi-grade universal 15W40 shall meet the performance and warranty requirements of virtually all diesel and gasoline engine manufacturers, including, but not limited to Caterpillar, Cummins, Detroit Diesel, John Deere, Massey Ferguson and Mack and meet the most current API service requirements classifications.
9. Offer only motor oil products that are formulated using the re-refined base stock specified above and commercial additive packages blended as precise percentage to provide finished products that meet industry standards.
10. Offer motor oil products that are available in cases of 12 quarts and 55 gallon drums.

## TECHNICAL SPECIFICATION

### L. ANTIFREEZE – PERMANENT:

Permanent antifreeze shall meet or exceed all generally accepted specifications for Ethylene Glycol Antifreeze and shall be compatible with other brands of Ethylene Glycol based antifreeze. The antifreeze shall not adversely affect rubber hoses or gaskets and shall not harm automotive finishes.

The ethylene glycol based antifreeze/coolant proposed shall be of an aluminum/all metals formula, and perform equally well in aluminum as well as in conventional cooling systems. The antifreeze/coolant shall meet or exceed the following manufacturers' specifications or the most current revisions thereof:

- 1) Regular Antifreeze:  
     General Motors      GM 1825M  
     Ford                    ESE-M97B44-A  
     Chrysler               MS 7170
  
- 2) Extended Life:  
     Dexcool                GM6277M  
     WSSM97B51-A-1
  
- 3) Diesel Engine – Extended Life:  
     Texaco                 ASTMD4985

### COMPOSITION

<b>ASTM D 3306</b>	<b>SPECIFICATIONS</b>	<b>ASTM METHOD</b>
Specific gravity 60/80 degrees F	1.110 - 1.145	D1122
Freezing Point 50% V/V	-34 degrees or lower	D1177
Boiling Point, undiluted	300 degrees F Min.	D1120
Boiling Point, 50% V/V	226 degrees F Min.	D1120
Effect on Automotive finish	No effect	D1882
pH, undiluted	5.5 – 11.0	D1287
pH, 50% V/V	7.5 – 11.0	D1287
Reserve Alkalinity	10 Min.	D1121
Water. wt. %	5 Max.	D1123
Odor	Not Offensive	
Color	Distinctive	
Effect on non-metals	No Adverse effect	
Storage capability	1 year, Min.	
Foaming	150 ml. hgt., Max. 5 sec. Break, Max.	D1881 D1881
Cavitation – Erosion	8 Min.	D2809
Weight Per Gallon, 60 degrees F, 9.4 lbs.		

## TECHNICAL SPECIFICATION

### M. ANTIFREEZE - RECYLED

- 1) Made from 100% recycled (re-refined) ethylene glycol and meet the cooling, freeze protection, and the corrosion resistance requirements of gasoline, diesel, propane and natural gas engines with or without aluminum blocks.
- 2) Meet or exceed standards GM 1825-M, Ford ESE-M97B44-A, Chrysler MS 7170 and SAE J1034, as well as the following ASTM standards:

D4340 (Aluminum Corrosion Test)	D1121 (Reserve Alkalinity)
D1177 (Freezing Point Concentrate)	D1881 (Foaming Behavior)
D1120 (Boiling Point Concentrate)	D2570 (Corrosion Inhibitor)
D1122 (Specific Gravity Concentrate)	D1384 (Glassware Corrosion)
D1119 (Ash Content Concentrate)	D2809 (Cavitation and Erosion)
D1287 (pH Value)	

- 3) Offer ready-to-use (diluted) recycled antifreeze that meets or exceeds new (virgin) product specifications.
- 4) Submit certification that the products meet the standards and specifications established in this RFP.
- 5) Submit certification that the recycling method used complies with all current local, state, and federal Regulations and that they are capable of recycling used antifreeze feedstock contaminated with incidental amounts of engine oil, brake fluid, transmission fluid, hydraulic fluid, solvent, gasoline, diesel fuel, heating oil, and/or propylene glycol.

### N. DIESEL EXHAUST FLUID (DEF)

In order to meet new more stringent EPA requirements to reduce diesel exhaust emissions, many manufacturers have introduced Selective Catalytic Reduction (SCR), a technology that reduces nitrogen oxides in diesel exhaust emissions to two safer byproducts, nitrogen and water vapor. To be effective, the DEF mixture needs to meet specific performance standard. The standard published by ISO (International Organization for Standardization) is intended to confirm that DEF products used in SCR equipped vehicles meets the exacting standards necessary.

Therefore, any DEF products bid in response to the State contract solicitation will need to be API certified to be considered. API certification confirms that the DEF supplied meet the ISO 22241 compliance standards established. Additionally, lab samples and test data have previously been submitted to API to ensure the specific standard adherence. By selecting this standard, the State does not have to independently judge or review submitted sample tests and reports.

### TECHNICAL SPECIFICATION

All DEF products bid shall be on the API list of approved Diesel Exhaust Fluid brands, and if necessary, provide documentation which confirms adherence to the API certification standards.

DEF is a relatively new product required for State and agency vehicles. Due to the lack of history, there is no reasonable way to determine the quantities that will be used during any given period. At the time of RFP posting, several agencies have expressed needs for DEF including DelDOT and school districts.

Since DEF requires product specific equipment to pump from the drums and totes, the State requests the awarded vendor supply one (1) hand pump for each ordering location. The awarded vendor may require a refundable deposit to protect against misuse, theft or damage.

O. BULK PRODUCTS:

1) ORDERING PROCEDURE

Ordering for bulk products may be on a "will call" basis or an "automatic delivery" system may be set up. Vendors will not be required to accept orders for product on a "will call" basis if the order is for less than 50% of the capacity of the tank. Automatic deliveries shall be established between the vendor and the ordering agency only after specific information regarding the account has been realized.

2) DELIVERY RESPONSE REQUIREMENT

A. Normal Delivery - All deliveries shall be completed within seven (7) days after receipt of order. If a vendor can respond more quickly to the State or agencies address this improved capability in your response to the bid solicitation.

B. Automatic Delivery – Keeping the tank filled shall be the responsibility of the vendor.

P. SPILLAGE:

All spillages must be corrected on an immediate basis to the satisfaction of the ordering agency. All associated cost including materials and labor shall be borne by the vendor. Damage resulting from a spillage shall be the responsibility of the vendor. The vendor shall immediately notify the below listed office of all spillages:

Division of Air and Waste Management  
24 hour Hotline  
In State Phone No.: 800-662-8802  
In/Out of State Phone No.: (302) 739-5072